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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,245	03/24/2004	Taeyoung Han	DP-310179	4199

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EXAMINER	
BAREFORD, KATHERINE A	
ART UNIT	**PAPER NUMBER**
1762	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/808,245	HAN ET AL.	
	Examiner	Art Unit	
	Katherine A. Bareford	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Claims 11-20 are canceled

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 21, 2006 has been entered.

The amendment filed with the RCE submission of December 21, 2006 has been entered. With the amendment, claims 11-20 have been canceled and claims 1-10, 21 and new claims 22-23 are pending for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3, 5-6 and 8-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6, 7 and 9-11 of copending Application No. 10/924,270. Although the conflicting claims are not identical, they are not patentably distinct from each other because 10/924,270 provides all the features required by the claims of the present application and more. For example, in claim 1 of 10/924,270 all of the same features as claim 1 of the present application are required and a further requirement as to the structure of the supersonic converging/diverging nozzle is made, and this structure is not prevented by the present claims. The difference of the chamber, adherence and increased time and temperature would be inherent from using the described device. As to the injecting the particles parallel to a longitudinal axis of the gas/powder exchange chamber (claim 6 of the present application), it is the Examiner's position that this is well known in the art of kinetic spraying to be the conventional direction of injection.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. In the amendment of December 21, 2006, as to the outstanding provisional double patenting rejection, applicant notes that although a Terminal Disclaimer has not been submitted, applicant is prepared to submit such a Terminal Disclaimer in the future upon an indication of allowable subject matter. The Examiner has reviewed this statement, and the provisional double patenting rejection above is maintained as no Terminal Disclaimer or arguments against the rejection have been provided.

5. Claims 1-3, 5-6 and 8-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 7-11 of copending Application No. 10/999,581. Although the conflicting claims are not identical, they are not patentably distinct from each other because 10/999,581 provides all the features required by the claims of the present application and more. For example, in claim 9 (which depends on claims 1 and 8) of 10/999,581 all of the same features as claim 1 of the present application (1000 mm of claim 9 is greater than 80 mm, for example) are required and a further requirement as to the forming of a low resistance electrical connection is made, and this formation is not prevented by the present claims. The difference of the adherence and increased time and temperature would be inherent from using the described device. As to the injecting the particles parallel to a longitudinal axis of the gas/powder exchange chamber (claim 6 of the present application), the velocity of acceleration (claim 9) and the substrate material

(claim 10), it is the Examiner's position that this is well known in the art of kinetic spraying to be the conventional direction of injection, velocity and substrate material. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

6. The rejection of claims 1-10 and 21 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn due to applicant's amendments clarifying the claims of December 21, 2006.

7. The rejection of claims 1-10 and 21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn due to applicant's amendments clarifying the claims of December 21, 2006.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

New claim 23 does not have any requirement as to the specific length of the "conditioning chamber", but rather describes the length as "sufficient to increase a temperature of the particles from about 150 degrees Kelvin to about 250 degrees K as the particles travel in the powder/gas conditioning chamber". However, this is new matter. The specification specifically describes such an increase in temperature as measured when using a conditioning chamber length of 240 mm (figure 4 and paragraph [0041]). However, the rest of the specification describes the length of the conditioning chamber of at least 20 mm. Here, there is no requirement as to the length in this claim, and with a high temperature in the conditioning chamber, it appears that the length could be 10 mm, for example, to meet the required temperature increase, thus placing the scope of the claim outside that provided by the application as originally filed. Therefore, this claim contains new matter.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-6, 8-10 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenkiste et al (US 6283386) in view of Kay et al (US 2001/0042508).

Claims 1, 23: Van Steenkiste teaches a method of kinetic spray coating a substrate. Column 1, lines 10-15. Particles of a powder are provided. Figure 2 and column 3, lines 30-65. Van Steenkiste notes that kinetic spray coating is also known as cold gas dynamic spray coating. Column 1, lines 15-25. The particles are injected into a gas/powder exchange chamber (the mixing chamber 42) and entrained into a flow of main gas in this chamber. Figure 2 and column 3, lines 30-65. The main gas is at a temperature insufficient to heat the particles to a temperature above a melting temperature of the particles. Column 3, lines 30-65 and column 2, lines 1-5. The particles entrained in the main gas in the gas/powder exchange chamber can be considered to be directed first into a gas/powder exchange chamber and then into a

"downstream" gas/powder conditioning chamber that exits further down the length of the chamber, as the "mixing chamber 42" can be described as both chambers as no structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Figure 2 and column 3, lines 30-65. The passage of the particles through the "conditioning" part of the chamber increases a residence time in that named part of the chamber, since if it was not there, no residence time would be possible. Furthermore, the passage through the "conditioning" part of the chamber also increases the temperature of the particles since the particles are heated by the hot air in that part of the chamber. The particles entrained in the flow of gas from the "conditioning" chamber are directed into a converging diverging supersonic nozzle, thereby accelerating the particles to a velocity sufficient to result in adherence of the particles on a substrate positioned opposite the nozzle. Figures 1-2 and column 3, lines 55-65.

Claim 2: the particles can be a metal, alloy, polymers, ceramic or semiconductor. Column 1, lines 55-60 and column 4, lines 25-30.

Claim 3: the particle diameter can be 1-106 microns. Column 4, lines 10-30 and column 5, lines 25-55.

Claim 5: the main gas temperature can be 900 degrees F (approximately 482 degrees C) , for example. Column 4, lines 45-50.

Claim 6: the particles are injected parallel to a longitudinal axis of the gas/powder exchange chamber (mixing chamber). Figure 2.

Claim 9: the particles can be accelerated to about 1000 m/sec. Column 1, lines 65-68.

Claim 10: the substrate can be a metal alloy. Column 4, lines 35-40.

Claim 22: the main gas can flow through a "flow straightener" before entering the exchange chamber, and thus the exchange/conditioning chamber is downstream of the flow straightener and upstream of the nozzle. Figure 2 and column 3, lines 40-65 (see flow straightener 40).

Van Steenkiste teaches all the features of these claims except (1) the length of the conditioning chamber (claims 1,8), (2) injection pressure (claim 4) and (3) the amount of temperature increase (claims 1, 21, 23). Van Steenkiste does teach that it was believed that a threshold velocity should be reached in order for the particles to desirably adhere to the substrate, and that the velocity achievable is related to the air temperature. Column 4, line 60 through column 5, line 15. Van Steenkiste further reasoned that reducing the flow of unheated powder feeder air relative to the heated main air flow that accelerates the particles provides that the resulting temperature of the mixed air flow through the nozzle is then greater and provides higher air velocities to accelerate larger particles to the threshold velocity, resulting in better adhesion. Column 5, lines 1-20. As to the injection pressure, Van Steenkiste teaches that the air is fed using a high pressure powder feeder from an original air compressor capable of supplying air pressure up to 500 psi. column 3, lines 30-40. As to the amount of temperature increase,

Van Steenkiste shows exposing the particles to air heated to 900 degrees F. Column 5, lines 25-45.

Kay teaches an apparatus and method of kinetic spray (cold gas dynamic spraying) coating a substrate. Paragraph [0001]. Particles of a powder, which can be a metal, alloy or polymer, are provided. Figures 1-2 and paragraphs [0001] and [0016]. The particles are injected into a gas/powder exchange chamber (the mixing chamber 15) and entrained into a flow of main gas in this chamber. Figure 2 and paragraph [0016]. The main gas is at a temperature insufficient to heat the particles to a temperature above a melting temperature of the particles. Paragraphs [0001] and [0016]. The particles entrained in the main gas in the gas/powder exchange chamber can be considered to be directed into a gas/powder conditioning chamber, as the "mixing chamber 15" can be described as both chambers as no structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Figure 2 and paragraph [0016]. The particles entrained in the flow of gas from the "conditioning" chamber are directed into a converging diverging supersonic nozzle, thereby accelerating the particles to a velocity sufficient to result in adherence of the particles on a substrate positioned opposite the nozzle. Figure 2 and paragraphs [0001] and [0016]. Kay teaches to control the length of extending portion 13 of the gas entrained powder through powder feed tube 7 into the mixing chamber 15 to fine tune performance characteristics of the system. Paragraphs [0016] and [0020]. Changing the point of entry of the powder from the tube would change the length of the

"conditioning chamber" as the powder would travel a different length after being "entrained". Kay also teaches that a high pressure gas stream is used to feed the gas into the system. Paragraph [0015] and figure 1.

It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Van Steenkiste to perform routine experimentation to optimize the length of the mixing chamber (and thus, also the "conditioning chamber") as suggested by Kay in order to optimize the performance characteristics of the system, because Van Steenkiste provides that the air temperature is directly related to the air velocity reachable in the supersonic nozzle, and achieving higher air temperatures allows for achieving higher velocity in the nozzle and greater adhesion of particles, and Kay further indicates that controlling the entry point of the powder nozzle (changing the length of powder passage through the "mixing chamber") should be optimized to fine tune performance characteristics of the system. The longer the powder passes through the mixing chamber/conditioning chamber, the longer for the mixture of air (the unheated powder feed air and the heated main air) to become heated (as the unheated powder feed air is heated by the heated main air) to an equilibrium temperature and allow for maximum velocity, thus providing that the mixing chamber/conditioning chamber should be as long as possible to provide the optimum air temperature. While applicant provides benefits of using a conditioning chamber as claimed, these benefits would be suggested by the desire provided by the references to provide a long mixing chamber. It would further have been obvious to modify Van

Steenkiste in view of Kay to perform routine experimentation to optimize the amount of pressure that the injected particles are provided at above the pressure of the main gas because Van Steenkiste and Kay both teach to provide the injected particles using a high pressure feeder and it would be clear to one of ordinary skill in the art that the pressure of the feeder should be above the pressure of the main gas to prevent backflow into the feed tube but low enough to provide for optimum entraining, so one of ordinary skill in the art would optimize the pressure amount so as to prevent this backflow and still allow for desirable entraining of particles and main gas. As to the amount of increased temperature in the particles during exposure to heated air in the conditioning chamber, it would have been obvious to modify Van Steenkiste in view of Kay to perform routine experimentation to optimize the time that the particles are heated to so as to provide optimum velocity of the particles for optimum adhesion, and the time of heating would provide the amount of temperature increase.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenkiste in view of Kay as applied to claims 1-6, 8-10 and 21-23 above, and further in view of Schwarz et al (US 5273957).

Van Steenkiste in view of Kay teach all the features of these claims except the angled entry of the particles.

However, Schwarz teaches that when spraying particles through a nozzle system onto a substrate, it is well known to also provide the particles at an angled entry prior to the spray nozzle. See figures 1-2 and column 4, lines 30-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Van Steenkiste in view of Kay to provide for angled entry of the particles as well as longitudinal entry as suggested by Schwarz with an expectation of providing a desired flow of particles, because Van Steenkiste in view of Kay wish to entrain particles into a flow of gas and Schwarz teaches that particles can also be entrained into a flow with an angled entry. While Schwarz goes on to melt the particles, the initial entraining remains the same whether the particles are melted or not.

14. Teets et al (US 2006/0113359) is the publication of 10/999,581.

Response to Arguments

15. Applicant's arguments filed December 21, 2006 have been fully considered but they are not persuasive.

Applicant argues as to the 35 USC 103 rejection that Van Steenkiste and Kay lack the claimed conditioning chamber with a length equal or greater to 80 mm. Applicant notes that the inventive significance of at least 80 mm length is easily realized with reference to Figure 4 and paragraph [0041] of the present case, where the increase in temperature of the particles due to the existence of the conditioning chamber as

compared to a system that only has an exchange chamber going directly to a nozzle, such as in Van Steenkiste and Kay can be realized. While the Examiner indicated in the Final Office Action that the use of a longer exchange chamber is explicitly desired by Van Steenkiste in order to provide a higher overall gas/powder mixture temperature, which results in a higher particle velocity and better adherence, and that one would be motivated to meet this desire by adding the teachings of the adjustable powder feeder tube of Kay, applicant argues that even if these references could be properly combined, they would still not teach a conditioning chamber of 80 mm or greater length. Applicant states that one of the inventors has analyzed a number of commercially available kinetic spraying systems (either the systems themselves or photographs of the systems), including one from ASB Industries (owner of Kay), and one embodied in Van Steenkiste et al., and has estimated that even if the powder feed tubes were adjusted to maximize a length of the chamber between the powder feed tube and the nozzle, it would be impossible to have a chamber with a length of 80 mm or greater. Simply stated, the dimensions of these prior art systems are such that there is not enough room between the powder feed tube and the nozzle to place such a chamber. As to new claim 23, applicant further argues that the claim provides for a required temperature increase per length of the conditioning chamber of from about 150 to about 250 degrees Kelvin, and that this has been found to improve adherence of the particles to the substrate and that neither Van Steenkiste nor Kay disclose, teach or suggest such a temperature increase.

The Examiner has reviewed these arguments, however, the rejection is maintained. As discussed in the rejection above, Van Steenkiste indicates that air temperature that the particles are exposed to is directly related to the air velocity reachable in the supersonic nozzles, and that one problem with this air temperature is the addition of a flow of unheated air when the particles are provided (see column 5, lines 1-15). While Van Steenkiste does not teach to increase the particle temperature by providing a conditioning chamber or increasing the length of the conditioning chamber so that residence time is increased, the Examiner has (1) noted that the exchange chamber of Van Steenkiste reads on an exchange chamber followed by a conditioning chamber as the "mixing chamber 42" of Van Steenkiste can be described as both chambers as non structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Thus, the claimed "conditioning chamber" length can be considered the downstream portion of the chamber 42 of Van Steenkiste, as long as the chamber 42 has sufficient length, and (2) has cited Kay which indicates that the entry point of the powder feed tube 7 into mixing chamber 15 can be changed to fine tune performance characteristics of the system. The Examiner has provided that it would have been obvious to provide the longer length of flow through the chamber in Van Steenkiste by adjusting the particle entry point as suggested by Kay to fine tune performance characteristics, because the longer the powder passes through the mixing chamber/conditioning chamber, the longer for the mixture of air (the unheated powder feed air and the heated main air) to become heated (as the unheated

powder feed air is heated by the heated main air) to an equilibrium temperature and allow for maximum velocity, thus providing that the mixing chamber/conditioning chamber should be as long as possible to provide the optimum air temperature. In other words, the use of a long chamber is suggested in order to provide a high air temperature, which is explicitly desired by Van Steenkiste (higher air temperature is noted as being explicitly desired, not length, which is suggested by the combination of references). The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the present case, changing the point of entry of the powder would change the length of the "conditioning" chamber as the powder would travel a different length after being entrained (note the discussion in the rejection above, as to how the mixing chamber can be considered the exchanging chamber and the connected conditioning chamber). As the length that the particles flow increases, the particles would inherently have increased residence time and increased temperature as compared to a flow of less length due to the exposure of the particles to the heated air for a longer time. As to the specific length of the conditioning chamber as being over 80 mm, this would be provided by the routine experimentation to optimize the length of flow as discussed the rejection above. Applicant has provided no showing of unexpected benefits in regards to the particular length claimed, only that expected increased adherence benefits would be provided, which would also be

expected with the longer length for the reasons of equalizing air temperature.

As to

Applicant's statements with regard to analyzing commercially available systems, this appears to be attorney arguments that cannot take the place of evidence, as discussed in MPEP 716.01(c), were it is noted that

> " The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant."

Here applicant's attorney appears to be arguing the "inoperability of the prior art." Furthermore, the Examiner is not arguing that Van Steenkiste or Kay alone teaches the prior art, but that the combination provides the suggestion to optimize the length, which would include providing a new system with an optimized longer length. As to the optimization of temperature increase as provided by claim 23, it remains the Examiner's position that as described in the rejection above, it would have been obvious to modify Van Steenkiste in view of Kay to perform routine experimentation to optimize the time that the particles are heated to so as to provide optimum velocity of the particles for optimum adhesion, and the time of heating would provide the amount of temperature increase. As further discussed above, the use of the long chamber as suggested by Van Steenkiste in view of Kay to get the desired high air temperature

would also lead to increased particle temperature, as the particles are exposed the heated air a longer time.

Information Disclosure Statement

16. In the Information Disclosure Statement of December 27, 2006, various references have not been considered. US references 5,242,101, 5,875, 626 and 6,422,039 have not been considered because the provided names and dates do not correspond to the provided numbers. None of the foreign patent documents listed have been considered, because no copies were provided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KATHERINE BAREFORD
PRIMARY EXAMINER